

# Leading experts investigate Shaken Baby Syndrome

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Shaken Baby Syndrome (SBS), also known as childhood neurotrauma or inflicted traumatic brain injury, is the leading cause of death from childhood maltreatment. Unlike many types of child abuse, the action that causes SBS is known, occurs quickly, and is, theoretically, largely preventable.

An international symposium sponsored by the National Center on Shaken Baby Syndrome examined how to establish the incidence of inflicted traumatic brain injury in young children and explored issues of definitions, passive versus active surveillance, study designs, proxy measures, statistical issues and prevention. Key findings are published in a Special Supplement to the April 2008 issue of the *American Journal of Preventive Medicine*.

SBS is a form of intentional injury to infants and children caused by violent shaking with or without associated contact with a hard surface. The mortality rate of victims of this intentional brain injury is about 25%, while survivors do very poorly. In a recent Canadian study, investigators found that after 10 years only 7% of the survivors were reported as “normal,” 12% were in a coma or vegetative state, 60% had a moderate or greater degree of disability and 85% would require ongoing multidisciplinary care for the rest of their lives.

Guest Editors Robert M. Reece, Desmond K. Runyan, and Ronald G. Barr and an international group of authors significantly contribute to the increasing visibility of violence against children in general and child

maltreatment in particular. They state that although prevention has been a highly desired but elusive goal in the field of child abuse, the apparent potential for prevention of inflicted childhood neurotrauma in particular through universal educational initiatives, both in North America and potentially around the world, has contributed considerable urgency to the importance of addressing these challenges. The symposium participants who convened to address these measurement issues were very cognizant of these challenges.

Presentations addressed two main themes: (1) the adequacy of current and/or projected systems for measuring the incidence of shaken baby syndrome; and (2) a review of available strategies for evaluating the effectiveness of primary programs for its prevention in large jurisdictions.

Reece addressed the complex issue of nomenclature variants and how they might (or might not) be integrated. Runyan described the challenges and emerging evidence concerning rates of the caregiving risk behavior of shaking. Keenan, Minns and Trent described their experiences with active and passive surveillance systems. Bennett described the countrywide Canadian Pediatric Surveillance Program, and Ryan described the design and proposed use of the Department of Defense Birth and Infant Health Registry to measure inflicted childhood neurotrauma.

To assess strategies for evaluating the effectiveness of prevention programs in large jurisdictions, Rivara presented the strengths, weaknesses, and potential pitfalls of available designs applicable at a jurisdictional level, and Shapiro discussed whether case control designs used successfully in disease prevention research could be applied to SBS. Finally, Ellingson, Leventhal, and Weiss described comparative rates derived from retrospective passive surveillance data sets to those derived from prospective active surveillance studies, and Runyan, Berger and

Barr provide an integrative proposal for the “ideal system” to measure inflicted neurotrauma incidence.

Writing in the supplement, Guest Editors Ronald G. Barr, University of British Columbia, Vancouver, and Child & Family Research Institute, and Desmond K. Runyan, The University of North Carolina, Chapel Hill, state, “...it is apparent that there is a ‘bad news/good news’ storyline emerging here. While the challenges to measuring inflicted injury are real and considerable, it is equally clear that considerable progress has been made and that reliable and valid measurement appears feasible and obtainable. Substantive work continues to be done toward providing reasonable measures that will be informative both about the nature and scope of inflicted neurotrauma in infants and about the possibility that prevention programs will be able to be demonstrated to be effective (or not) on the basis of empiric measurements. It is none too soon.”

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